RocketRAID 264x
SAS/SATAII Host Adapter
User's Guide

HighPoint

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HighPoint Technologies, Inc.

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HighPoint Technologies, Inc.

HighPoint Technologies, long recognized as a leader in mass storage technologies specializes in the design and manufacturer of HBA (Host Bus Adapters) and HighPoint RAID IP (Intellectual Property). HighPoint provides a broad range of scalable hardware HBA's that meet the storage requirements from Enterprise to SMB (Small Medium Sized Business) to PC enthusiast.

The HighPoint RAID IP includes **TerabyteArchitecture**™ for (Performance, Protection and Prevention).

TerabyteStream™ - leverages the built-in Intel Xscale XOR Engine to deliver unprecedented RAID 5 and 6 performances.

TerabyteGuard™ - prevents data lose and increases data reliability with advanced hard drive inspection features utilizing bad sector repair and remapping.

TerabyteSaver™ - optimizes data protection with a battery backup and with write journaling thus preventing data loss.

Congratulations

You have purchased one of the highest performing and most cost effective 4 channel SAS RAID controllers available. The RocketRAID 264x offers the flexibility to support both the highest performing SAS 15,000 RPM hard drives, and larger capacity cost sensitive SATA hard drives in homogeneous and heterogeneous storage environments. The RocketRAID 264x has the versatility to meet the bandwidth requirements for high performance applications like video capture and editing, CAD/CAM and digital graphics.

Remember to visit the HighPoint websites at http://www.highpoint-tech.com and http://www.hptmac.com. There you can find information on all of HighPoint's products with FAQ's, online manuals, BIOS and driver updates.

Specifications and Features

Host Adapter Architecture

- PCI-Express x1 (RR2640X1), x4 (RR2640X4, RR2642) -Compatible with PCI-Express x8, x16 slots.
- SAS/SATA 3Gb/s Device Ports: 4 Internal (2640X1/X4) or 2 Internal/2External (RR2642)
- Directly supports up to 4 3Gb/s SAS or SATA hard drives
- NCQ (Native Command Queuing)
- Low Profile
- RoHS compliant

Advanced RAID Features

- Supports RAID 0,1,5,10 and JBOD
- Multiple RAID array support
- Multiple logical drive support

- BIOS booting support
- Online Array roaming
- Automatic hard drive (insert / remove) detection
- Automatic RAID rebuild
- 64bit LBA support greater than 2TB per volume

Array Monitors, Alerts and Indicators

- Hard Drive LED Indicators (Activity and Failed)
- Email Notification
- Alarm/Buzzer alerts for drive/array failure
- SAF-TE (I2C) and SGPIO enclosure management

RAID Management

- Online Capacity Expansion (OCE) and Online RAID Level Migration (ORLM)
- Quick and Background initialization for instant RAID configuration
- Write Back and Write Through support
- API library for customization
- CLI (Command Line Interface)
- Web GUI RAID management (local and remote monitoring)
- SHI (Drive analysis driven from S.M.A.R.T)

Operating System Support

- Windows XP, 2003, Vista, 2008 (32 and 64-bit versions)
- Linux (Fedora Core, Red Hat Enterprise / CentOS, SuSE, Debian, Ubuntu)
- Mac OS X 10.5.x and above
- FreeBSD

Physical Specifications

RR2640X4 / RR2640X1 Size: (87.8mm X 64.3mm) 3.45"L x 2.53"W
RR2642 Size: (79.4mm X 67.5mm) 3.13" L x 2.66" W

EMI: FCC Part 15 Class B and CE

Thermal and Atmospheric Characteristics:

Work Temperature Range: +5 C ~+ 55 C

Relative Humidity Range: 5% ~ 60% non condensing

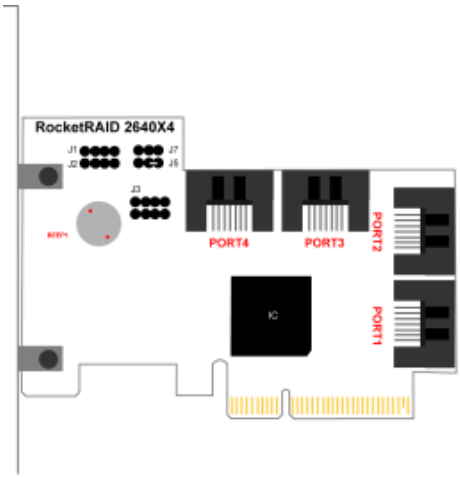
Storage Temperature: ~20 ~ 80 C MTBF: 920,585 Hours

Electrical Characteristics:

PCI-E	3.3V
Power	5W max

1 – RocketRAID 264x (2640X4, 2640X1 and 2642) Host Adapter layout

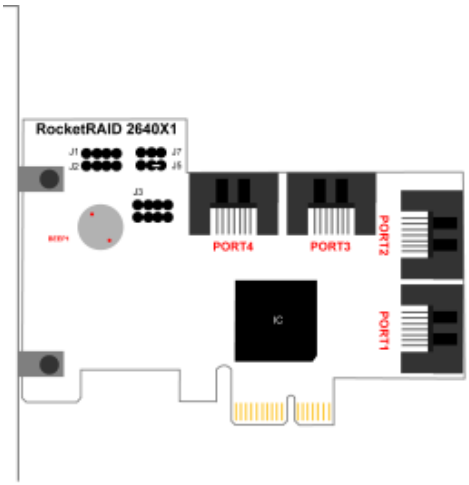
RocketRAID 2640X4



Port1- Port4

Port1 – Port4 represent the RocketRAID 2640X4's 4 Internal SAS channels.

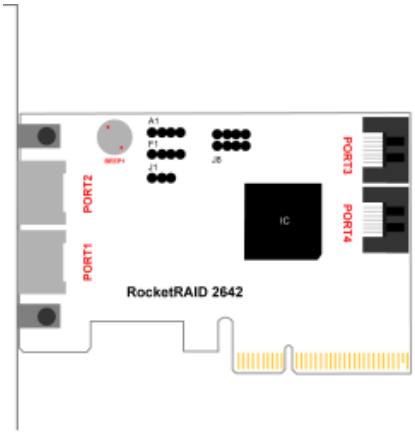
RocketRAID 2640X1



Port1- Port4

Port1 – Port4 represent the RocketRAID 2640X1's 4 Internal SAS channels.

RocketRAID 2642



Port1- Port4

Port1,Port2 represent the RocketRAID 2642's 2 External SAS channels.

Port3,Port4 represent the RocketRAID 2642's 2 Internal SAS channels .

2 – LED Connections

LED connectors (Drive-activity/Drive-failure): LED support is discussed in greater detail in the LED Connection section. The RocketRAID 264x host adapter has 2 LED connectors that are used to indicate the activity and failure status of hard drives attached to the card's 4 SATA/SAS channels.

J1, J2 (RR2640X4 and RR2640X1)

J1 provides LED support for Drive Activity, while J1 supports Drive Failure.

Pin Number / Connections	Pin 1	Pin 2	Pin3	Pin4
J1	Drive1	Drive2	Drive3	Drive4
J2	Drive1	Drive2	Drive3	Drive4

A1, F1 (RR2642)

A1 provides LED support for Drive Activity, while F1 supports Drive Failure.

Pin Number / Connections	Pin 1	Pin 2	Pin3	Pin4
A1	Drive1	Drive2	Drive3	Drive4
F1	Drive1	Drive2	Drive3	Drive4

BEEP1-Speaker

Alarm (speaker): this speaker emits an audible alarm in the case of Drive/array failure.

J7 (RR2640X4 and RR2640X1)

This jumper supports the SAF-TE interface (I2C).

Pin Number	Pin1	Pin2	Pin3
Description	SCL	GND	SDA

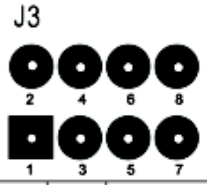
J1 (RR2642)

This jumper supports the SAF-TE interface (I2C).

Pin Number	Pin1	Pin2	Pin3
Description	SCL	GND	SDA

J3 (RR2640X4 and RR2640X1)

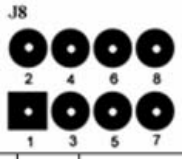
This jumper is SGPIO signal. The following diagram describes the connector pin definitions.



Pin Number	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6	Pin7	Pin8
Description	NC	SDATAIN	GND	SDATAOUT	SLOAD	GND	SCLOCK	NC

J8 (RR2642)

This jumper is SGPIO signal. The following diagram describes the connector pin definitions.



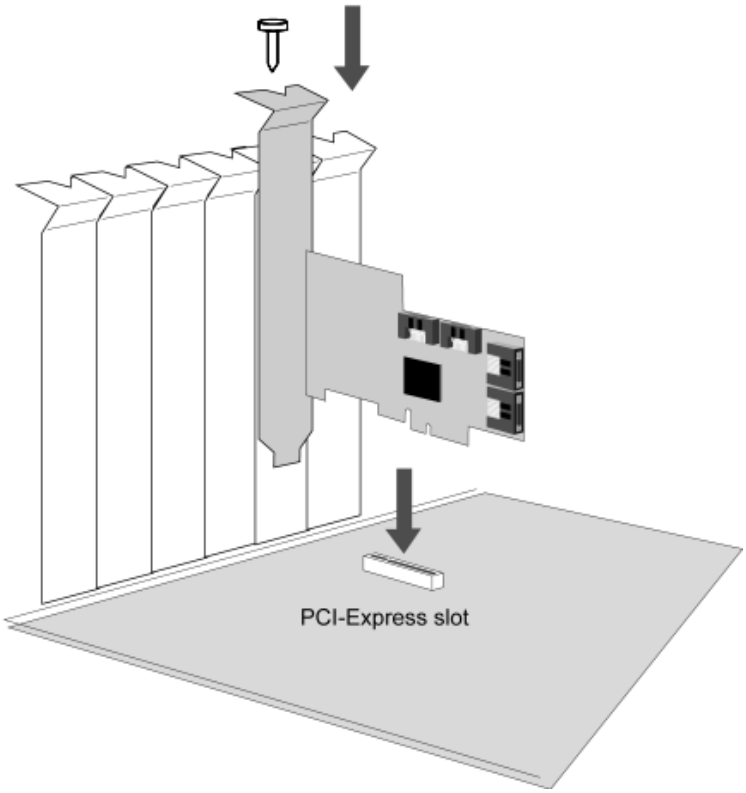
Pin Number	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6	Pin7	Pin8
Description	NC	SDATAIN	GND	SDATAOUT	SLOAD	GND	SCLOCK	NC

3 – Hardware Installation

Note: *Make sure the system is powered-off before installing the RocketRAID host adapter.*

The RocketRAID 264x include both standard and low-profile brackets. It may be necessary to attach the low-profile bracket in place of the standard bracket, depending upon the chassis design. Open the system chassis and locate an unused PCI-Express slot.

1. Remove the PCI slot/bracket cover.
2. Gently insert the RocketRAID card into the PCI-Express slot, and secure the bracket to the system chassis.



3. After installing the adapter, attach hard drives to the host adapter using the appropriate data cable. These host adapters can support up to 4 3Gb/s SAS or SATA hard drives directly.
   Note: *Many server-level chassis include hard-disk hot-swap bays. For these system chassis, cables are attached to the chassis backplane, rather than directly to each individual hard disk. Consult the chassis's manual for proper installation procedures.*
4. Close and secure the system chassis.

4 - Verifying Installation

Once the host adapter and hard disks have been installed into the chassis, boot-up the system to verify that the hardware is properly recognized.

1. Power on the system. If the system detects the presence of the adapter, the RocketRAID 264x BIOS Utility will be displayed during bootup.
2. Press **Ctrl+H** to access the RocketRAID 264x adapter's BIOS Utility.

The BIOS Utility will display information about hard disks attached to the adapter. Make sure all attached disks are detected by this utility. If any of the hard disks are not detected, power down the system and check the power and cable connections.

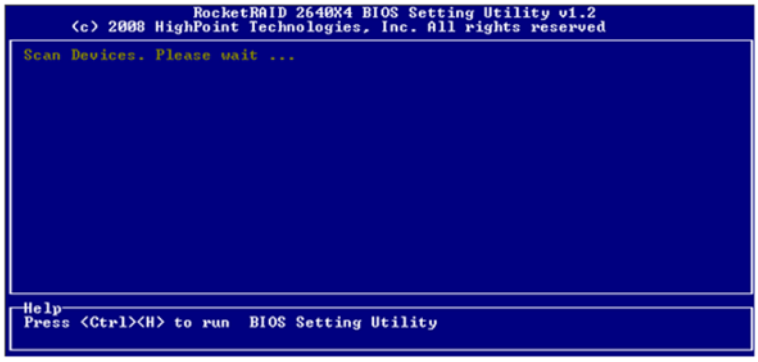
RocketRAID BIOS Utility

The RocketRAID 264x card will display its BIOS screen during the system's boot process.

Press Control + H when prompted, to access the BIOS settings Menu.

1 - BIOS Settings Overview

The RocketRAID 264x BIOS utility is an interface that provides management commands and controller related settings.


RocketRAID 2640X4 BIOS Setting Utility v1.2
(c) 2008 HighPoint Technologies, Inc. All rights reserved
Scan Devices. Please wait ...
Help
Press <Ctrl><H> to run BIOS Setting Utility

Using the BIOS Utility

The following keys utilized by the RocketRAID 264x BIOS utility:

Alt – press Alt to highlight the tool bar.

Arrow keys – use these to move between different menu items

Enter – Open the selected toolbar command/execute the selected command.

Esc – move back to the previous menu, cancel the selected operation, or exit the BIOS Utility.

BIOS Commands

Create - this command is used to open the RAID Creation menu.

Delete - this command will delete the selected RAID array.

Add/Remove Spare - this command is used to assign hard disks to function as spare disks. The controller is capable of using spare disks to automatically rebuild broken or faulted RAID arrays.

Settings - this command opens the settings menu (selecting the boot disk/array, staggered drive spinup)

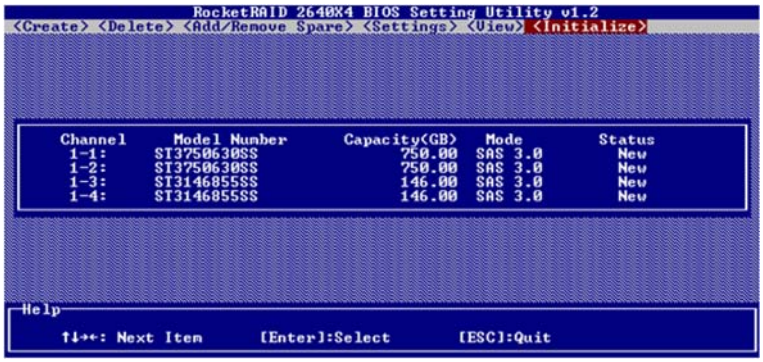
View – this command is used to select between two views: Devices (HARD DISKS), and Arrays (configured RAID arrays).

Initialize - this command is used to prepare disks for use with RAID arrays. Disks must be initialized before they can be used to create arrays.

2 - Creating RAID Arrays

Initializing Disks:

Before creating a RAID array, the disks must be initialized. Disk initialization writes necessary RAID configuration information to the hard disks. Select the Initialize command from the toolbar, and press ENTER.



Highlight the target disks using the arrow keys, then select using Enter. A numeral will be displayed before each selected disk. Once all target disks have been selected, press ESC. The utility will display a warning, and ask you to press Y (yes) to initialize, or N (no) to cancel. Once initialized, these disks can be used to create RAID arrays.

Warning: *Initialization will destroy all pre- existing data on the selected hard disks. Only initialize disks that do not contain critical data.*

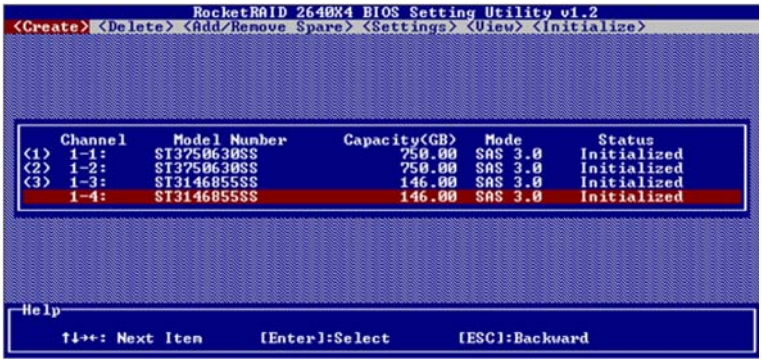
Creating Arrays:

Select Create from the toolbar and press Enter.

1. Use the arrow keys to select the RAID level and press ENTER.

2. Use the arrow keys to highlight the **Array Name** option and press Enter. The array name dialogue box will appear. Use the keyboard to input a new Array Name, and press the Enter key.

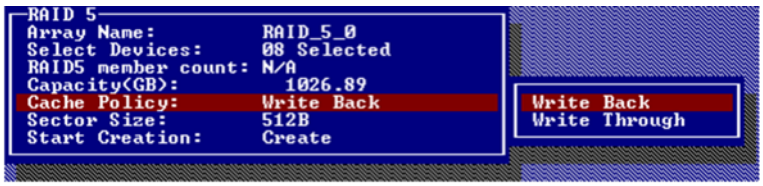
Note: *the Array Name command is optional – it is not necessary to name the array. The array can be named at a later time, and the name of the array can be changed at any time. On the Create menu, use the arrow keys to highlight the Select Devices item and press Enter. A device list will appear, and display all available hard disk drives.*



3. Highlight the target disks that you want to use, and press Enter to select them. A numeral will be displayed before each selected disk. This number designates disk order. After all of the disks have been selected and press the ESC key to return to the Create Menu.
4. Next, Use the ? arrow key to highlight the **Capacity (GB)** option and press Enter. The total available capacity will be displayed. Press ENTER if you wish to use all available space. If you wish to reserve disk space for additional arrays/single disks, use the keyboard to input the amount of space (in GB) you wish to set aside for this particular array, and press Enter.

Note: *Multiple arrays can be created using the same set of hard disk drives. The Capacity option allows you to set aside disk space that be used to create another array, set as a spare disk, or partitioned to act as a single disk (by the operating system).*

5. For redundant RAID arrays (RAID 1, 5, 10), select the **Cache Policy:**



Write Back – utilizes disk cache (higher performing)
Write Through – writes directly to the disks (may reduce the risk of data loss during a critical failure, but at the cost of lower performance)

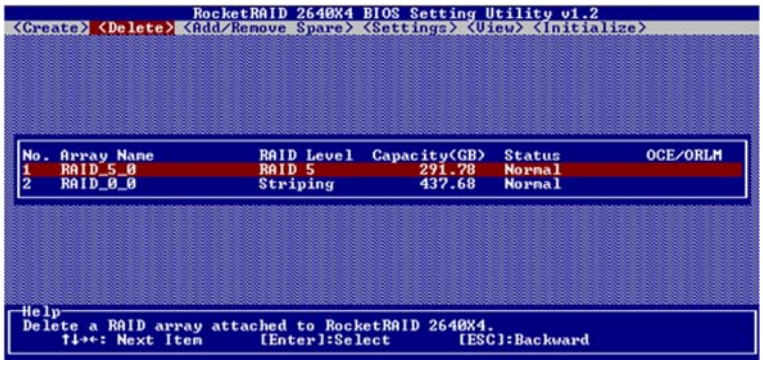
6. **Sector Size** – Also known as "Variable Sector Size". Use this option if you are using an older 32-bit Windows operating system. This allows older operating systems to support volumes over 2TB in size. Do not use if the operating system already supports large volumes (such as GPT).

7. To complete the creation procedure, use the arrow key to highlight the **Start Creation** item and press Enter. Press the **Y** (yes) key to create the array, or **N** (no) key to cancel the creation process.

3 – Deleting Arrays

Highlight the Delete command from the toolbar, and press Enter.

The BIOS utility will display a list of available RAID arrays. Select the array you wish to delete, and press Enter.

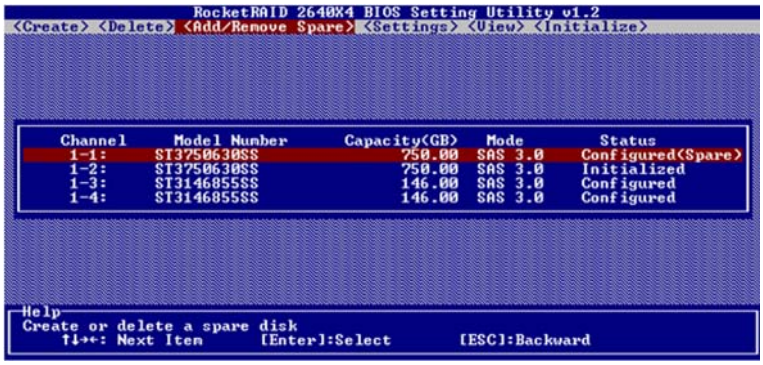


The utility will display a warning message. Press **Y** (yes) to delete the array, or select **N** (no) to cancel.

Warning: all data stored on the array will be lost – do not delete if the array contains critical data.

4 - Adding/Remove Spare Disks

This Add/Remove Spare command is used to assign a hard disk to act as a Spare Disk. Spare Disks are used to automatically rebuild Redundant RAID arrays (RAID 1, 5, 10) in the case of disk failure. As with creating RAID arrays, disks must be initialized before they can be used as spares. To set a hard disk to act as a Spare Disk, use the arrow keys to select the target disk from the list of initialized disks, and press Enter. To remove the Spare Disk setting from a hard disk, highlight the spare disk, and press Enter.



Generally, single disks are designated to act as spares (disks that are not configured into RAID arrays).
However, in some instances, disks that are members of RAID arrays may also be designated to act as a spare. If the disks in question are part of a RAID array that did not utilize the full available capacity at the time of creation, these disks may be used as spares. For example: a RAID 0 array was created between two 200GB hard disks, but only 200GB of space (out of a grand total of 400GB), was assigned to that array. In this example, 200GB of disk space remains unallocated. This unallocated space would allow these disks to be set as spares for a separate redundant array that falls into the same capacity range (200GB).

5 - Settings

To access the Settings menu, highlight the Settings command from the toolbar, and press Enter.

Select Boot Device – select which disk or array will act as the boot disk, if the motherboard BIOS instructs the card to act as the boot device.

Staggered Drive Spinup – This option is disabled by default. Enabling this setting will instruct the card to power up the hard disks, sequentially (one disk approximately every 2 seconds). Not all disk support this setting – consult the disk documentation for more information.

Warning: Western Digital hard disks do not support this setting. Enabling this setting is not recommended. If enabled, these disks may not be detected by non-RAID controllers.

HighPoint RAID Management and Device Drive CD

Each retail box includes a copy of the HighPoint Products Software CD.

This CD can be used to generate driver diskettes, and install the HighPoint RAID Management Utility Suite for a variety of operating systems.

1 - Creating a driver diskette

Windows 2000, 2003 and several distributions of Linux and FreeBSD require driver diskettes when installing the operating system directly to a disk or array hosted by the Rocket RAID host adapter.

To create a driver floppy diskette:

1. Insert the CD into the system's CD/DVD drive. The program should start automatically.
2. Insert a blank floppy diskette into the system's floppy drive.
3. Click on "Create Driver Diskette".
4. Click on the "Please Select a Product" drop-down button, and select the appropriate host adapter model from the list.
5. Click on the "Please Select the Diskette you want to create" drop-down button, and select the desired operating system from the list.
6. Click on the "OK" button to create the driver diskette.

2 - Device Driver Installation

Windows Driver Installation (Win2000, XP, Win 2003)

Before installing the RocketRAID 264x host adapter's device driver, make sure the host adapter and all required hard disks have been installed into the system's chassis/ disk enclosure. If you are working with a supplied driver, or driver download, you will want to extract the contents directly to a directory of your choice (or device). You will need to browse to this location, in order to load the driver (see step 2, below).

Installing the RocketRAID 264x driver for an existing Windows system.

After the operating system has booted, Windows will automatically detect the RocketRAID 264x host adapter, and request that a device driver be installed. To install the device driver, follow the steps outlined below:

1. When the "Found **New Hardware Wizard**" window appears, select "**Install from a list or specific location (Advanced)**", and click Next to continue.
2. Click on the "**Include this location in the search**" option, and select the system's floppy drive (generally Disk A). Next, insert the Driver Installation diskette into the system's floppy drive, or select Browse, and browse to the location of the driver. ***If you are using the RocketRAID 264x software CD, the drivers are located in RR264x – Driver – Windows – Windows (then select the appropriate folder).***
3. Windows may display a warning message that states the driver has "**not been signed**". Select "**Continue Anyway**", then click Finish when prompted. When windows asks to reboot the system, choose No.
4. Remove the Driver Installation diskette from the floppy drive, then Shut down and restart the computer.

Installation Verification

After the driver has been installed, and the system has been restarted:

1. Click the Start button, then right-click the "My Computer" icon. Select the Properties item from the pop up menu.
2. In the popup window, click the "Hardware" tab then click Device Manager button.
3. Double click the "**SCSI and RAID controllers**" entry. If the RocketRAID 264x device entry is not displayed, or there are "?" or "!" marks displayed near the RocketRAID 264x entry, the driver has not been installed properly. Delete the entries and reinstall the driver.

Installing the RocketRAID driver during a fresh Windows installation

1. After booting from the Windows CD or DVD-ROM, when the Windows Setup blue screen appears, look towards the bottom of the screen. Windows will prompt you to press the **F6** key if you want to install a third party SCSI or RAID driver.

   Press the **F6** key at this time.
2. The setup procedure will continue, and will later instruct you to press the "**S**" key to specify additional adapters. Press the "**S**" key as instructed.
3. Next, the setup program will prompt for the insertion of the driver diskette. Please insert the driver diskette, and then press ENTER to continue.
4. The next window will display several driver options. Please select the driver for the corresponding operating system, and press ENTER to continue.

Windows Vista/2008 Driver Installation

Installing the driver during a fresh Windows Vista/2008 installation

1. Boot from Windows Vista DVD.
2. When the screen "**where do you want to install Windows**" appears, click "**Load driver**" and browse for the driver location. Windows Vista will accept install drivers from various sources: floppy diskette, USB flash disk or CD. ***If you are using the RocketRAID 264x software CD, the drivers are located in RR264x – Driver – Windows – VistaWin2008 – 32 (or 64, if you are running a 64-bit version of the operating system).***
3. Select the RocketRAID 264x controller driver, and click "**Next**".
4. The driver is now installed – you can now commence with the standard OS installation procedures.

Installing the driver for an existing Windows Vista/2008 system

1. Install the RocketRAID 264x host adapter into the PC, then boot up Windows.
2. Windows should automatically detect the card, and display the "Found **New Hardware**" wizard pop-up window. Select "**Locate and install driver software**". When Windows asks: "**Windows needs your permission to continue**", select "continue".
3. Select "I don't have disc, show me other options" and then select "Browse my computer for driver software".
4. Specify the location of the driver and click "Next". ***If you are using the RocketRAID 264x software CD, the drivers are located in RR264x – Driver – Windows – VistaWin2008 – 32 (or 64, if you are running a 64-bit version of the operating system).***
5. When asked: "Would you like to install this driver software?", select "Install".
6. Reboot the system when prompted. The RocketRAID 264x will be available for use after Windows reboots.

Installation Verification

After the driver has been installed, and the system has been restarted:

1. Click the Start button, then right-click My Computer icon. Select the Properties item from the popup menu.
2. In the popup window, select Hardware tab and then click Device Manager button.
3. Double click the "**Storage Controllers**" entry. If the RocketRAID 264x device entry is not displayed, or there are "?" or "!" marks displayed near the RocketRAID 264x entry, the driver has not been installed properly. Delete the entries and reinstall the driver.

Linux and FreeBSD Device Driver installation

Visit our website for the latest Linux and FreeBSD related driver and software updates
http://www.highpoint-tech.com

Binary and source driver updates are routinely posted for a variety of Linux operating systems including Red Hat Enterprise, CentOS, OpenSuSE, and Fedora Core. Drivers are also available for several FreeBSD revisions, and are available from the same support page:
http://highpoint-tech.com/USA/bios_rr264x.htm

Several driver sets are also included with the RocketRAID 264x Software CD.

Each binary driver and source package includes an installation guide (.pdf format).

Linux Driver sets:

RR264x/Driver/Linux directory.

FreeBSD Driver sets:

RR264x/Driver/FreeBSD directory.

3 - HighPoint RAID Management Utilities (HRM)

To install the Web RAID Management Utility for Windows Operating Systems:
Click on "**Install RAID Management Software**".
Select the desired software from the drop down menu, and click on the "OK" button.

HighPoint Products Software CD
ReadMe First
Create Driver Diskette
Install RAID Management Software
Install Management Software
Please select the software to install:
HighPoint Web RAID Management Software (for RocketRAID 2xxx)
HighPoint Web RAID Management Software (for RocketRAID 3120/3510/3520)
HighPoint In-Band Management Service (for RocketRAID 3xxx/4xxx with OBM)
OK
Cancel

To install the Web RAID Management Utility for Linux Operating Systems

Red Hat Enterprise/CentOS, Fedora Core, Open SuSE

Linux operating systems that support .rpm packages, allow you to double-click the HighPoint Web RAID Management .rpm file to start the installation process.

1. Copy the Web RAID Management package from the RR264x Software CD, to the desktop of the Linux operating system. The .rpm file is located in HighPoint RAID Management Software – RR2xxx - Linux – WebGui-Linux.tbz.
2. Extract the .tbz file to the desktop, and browse to the appropriate .rpm file (there are 32 and 64-bit options).
3. Double click the .rpm file – this should open the operating's systems software installer. Enter the Administrative password when prompted and proceed with installation.

4. The package can also be installed manually, using a terminal. Log in as "root", open a terminal, and browse to the location of the .rpm file. Run the following command:
5. # rpm -i hptsvr-https-1.4-8.i386.rpm (or hptsvr-https-1.4-8.x86_64.rpm)

Note: *The i386 rpm package can also work on 64-bit systems if you have 32-bit runtime libraries installed. If you use the x86_64 rpm package, please make sure the controller driver has 64-bit ioctl support.*

Other Distributions

For Debian/Ubuntu Linux distributions, you can use **alien** to convert the rpm packages to a .deb package, then use "**dpkg -i**" command to install each package. Some script files may be lost during the conversion process from rpm to .deb, so you may need to make manual corrections.

The following files will be installed/configured:

/usr/bin/hptsvr - service program
/etc/hptcfg - service config file
/etc/rc.d/init.d/hptdaemon - service control script
/usr/share/hpt/webguiroot - data files

If there is no /etc/hptcfg present, you can add it manually using by using the "echo" command on the driver file name to /etc/hptcfg.

For example:

echo rr26xx.ko >/etc/hptcfg

Uninstalling the Utility

Open a terminal, and use the following command:
rpm -e hptsvr-https

RAID Management - CLI

Command Line interface versions of the RocketRAID management utilities are available for Linux and FreeBSD operating systems.

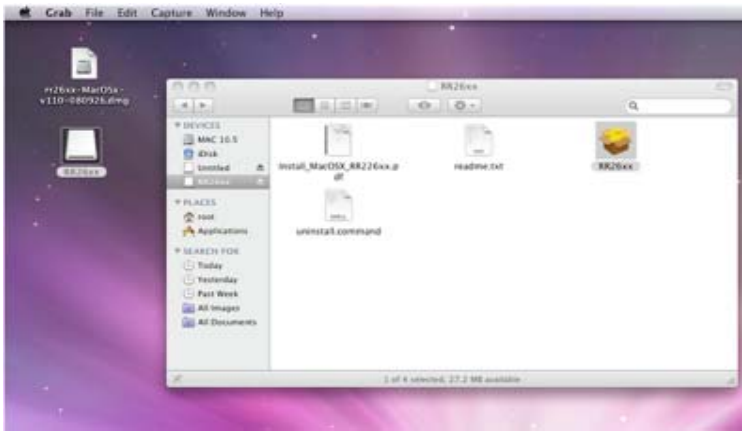
These packages are posted on the HighPoint Technologies, Inc. website, under the BIOS & Driver downloads page for the RocketRAID 264x.

4 - Mac OS X Driver and RAID Management Installation

The driver and software package for the RocketRAID 264x includes both the device driver for OS X, and a copy of the Web RAID Management utility.

Copy the Mac driver and software package from the RR264x Software CD, to the Mac Desktop.

Open the .dmg file, and double click “RR26xx” to begin installation.

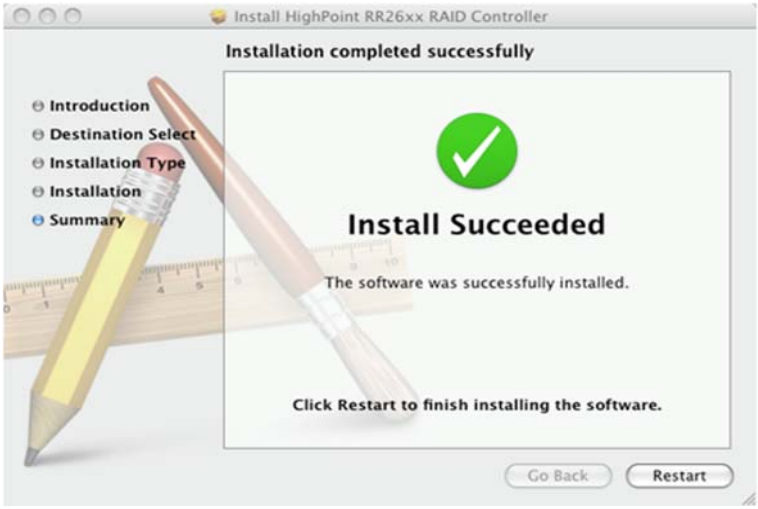


Install HighPoint RR26xx RAID Controller
Welcome to the HighPoint RR26xx RAID Controller Installer
Introduction
You will be guided through the steps necessary to install this software.
Go Back
Continue

Click “**Continue**” to proceed with installation

Select the installation destination:

Click "**Restart".**



After OS X reboots, the card will be recognized by the system. Configure arrays using the Web RAID Management interface. User guides for the Web interface are available from http://www.hptmac.com.

Check the product page for the corresponding RocketRAID 264x model, and click on the "Download Center" link.

Customer Support

If you encounter any problems while utilizing the RocketRAID host adapter, or have any questions about this or any other HighPoint product, feel free to contact our Customer Support Department.

Troubleshooting Checklist

Before contacting our Customer Support department:

- PCI-Express x4 (Compatible with PCI- Express x8, x16 slots). A jumper is used to select between x1 or x4 (default is x4)
- Make sure the latest BIOS, driver and HighPoint RAID Management software ware has being installed for the host adapter. The latest updates are available from our website.
- Prepare a list of the computer system's hardware and software (motherboard, CPU, memory, other PCI-E devices/host adapters, operating system, applications)

Contact Information

E-mail address: support@highpoint-tech.com

Phone: 408-240-6119

9:00AM-5:00PM, Pacific Standard Time

Additional information about HighPoint products is available from our web site:
http://www.highpoint-tech.com

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FCC Part 15 Class B Radio Frequency Interference statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

European Union Compliance Statement

This Information Technologies Equipment has been tested and found to comply with the following European directives:

- European Standard EN55022 (1998) Class B
- European Standard EN55024 (1998)

Thank You

Thank you for purchasing the RocketRAID 264x SATAII/SAS RAID Host adapter. We appreciate your support, and welcome any questions, comments or product suggestions you may have.